

ABSTRACT OF THE DISCLOSURE

A fast steering mirror for use in free space optical communication systems.

The fast steering mirror includes a gimbaled movement comprising an outer gimbal pivotally coupled to a base member and an inner gimbal pivotally coupled to the outer gimbal. A mirror that is posited by the apparatus is coupled to the inner gimbal. A first pair of voice coil drivers including a pair of magnetized stators fixedly coupled to the base member and a pair of voice coils fixedly coupled to the outer gimbal are provided along with a second pair of voice coil drivers comprising a pair of magnetized stators coupled to the base member and a pair of voice coils coupled to the inner gimbal. Selectable drive currents may be provided to the windings in the voice coils to position the mirror. In one embodiment, the fast steering mirror further includes a reference position seek mechanism.

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Terabeam/P071